Abstract

System and Method for Routing IP Datagrams

A datagram with a destination network address is received at a router. The
router identifies a next hop router en route to or associated with the destination network
5   address. The router determines whether or not transmission of the datagram on a link
to the next hop router would result in a bandwidth usage exceeding a bandwidth
threshold associated with the next hop router. If not, the router updates the bandwidth
usage associated with the next hop router to account for the datagram, and transmits
the datagram to the next hop router. If so, the router selects among other possible next
10 hop routers en route to or associated with the destination address, another next hop
router for which transmission of the datagram on a link to the other next hop router
would not result in a bandwidth usage exceeding a bandwidth threshold associated with
the other next hop router. Then, the router updates the bandwidth usage associated
with the other next hop router to account for the datagram, and transmits the datagram
15 to the other next hop router. If, among the other possible next hop routers, there is no
other next hop router for which the transmission of the datagram on the respective link
would result in the bandwidth usage being less than the respective bandwidth
threshold, then the router chooses among the other possible next hop routers, another
next hop router. Then, the router updates the bandwidth threshold associated with the
20 other, chosen next hop router with a larger, predefined bandwidth threshold.